CLAIMS

What is claimed is:

1. A method for communicating an alarm in a computer network, comprising:

detecting an event associated with a device or any component thereof on the computer network, wherein the device is associated with a particular site in a plurality of sites;

in response to detecting the event, propagating an alarm to an alarm identification component;

at the alarm identification component, augmenting the alarm with identification information to result in creating an augmented alarm; and

transmitting the augmented alarm to a network operations center for the computer network, wherein the network operations center processes alarms for each site in the plurality of sites.

2. The method of Claim 1, wherein the identification information identifies the particular site in the plurality of sites in which the alarm originated.

3. The method of Claim 1, wherein the identification information uniquely identifies the device on the computer network.

4. The method of Claim 1, wherein the identification information comprises an address for the device on the computer network.

5. The method of Claim 1, wherein the identification information comprises geographical information associated with the particular site in which the alarm originated.

6. The method of Claim 1, wherein the identification information comprises network information associated with the particular site in which the alarm originated.

7. The method of Claim 1, wherein the alarm identification component is hosted by one or moreedge routers associated with the particular site.

8. The method of Claim 1, wherein each site in the plurality of sites is a local area network, and wherein the alarm identification component is a router that communicates with one or more edge routers, wherein each of the one or more edge routers is associated with a different site in the plurality of sites.

9. The method of Claim 1, wherein the alarm identification component is in the device that detected the event.

10. The method of Claim 1, wherein the step of augmenting the alarm with identification information comprises:
conveying the identification information in a VarBind portion of a SNMP message associated with the alarm.

11. The method of Claim 1, wherein the step of detecting the event comprises:
detecting a condition using a SNMP agent that is in the device.

12. The method of Claim 1, wherein the step of propagating the alarm is performed by transmission of a SNMP message, a Syslog event, or a CNS bus event.

13. The method of Claim 1, further comprising the step of:
in response to detecting the event associated with the device, generating the alarm at one member selected from the group consisting of: a switch, a router, an IP

phone, a call manager component, a voice mail component, and an event monitoring component.

14. The method of Claim 1, further comprising the step of:
creating the identification information based on an address of the device on the computer network.

15. The method of Claim 1, further comprising the step of:
creating the identification information based on an address of an edge router associated with the particular site.

16. The method of Claim 1, further comprising the step of:
creating the identification information based on a table that maps device addresses to identification information.

17. The method of Claim 1, further comprising the steps of:
performing a first determination of whether the identification information may be created based on a table that maps device addresses to identification information;
if the first determination is negative, then performing a second determination of whether the identification information may be created based on an address of an edge router associated with the particular site; and
if the second determination is negative, then creating the identification information using a set of default identification information associated with the alarm identification component.

18. The method of Claim 1, wherein the alarm identification component augments the same identification information for each device in the particular site.

19. The method of Claim 1, wherein one or more of the plurality of sites uses network address translation.

20. The method of Claim 1, wherein the device is a first device, wherein the first device and a second device on the computer network both use network address translations, wherein the second device is associated with a different site in a plurality of sites than the first device, wherein the first device and the second device are associated with the same IP address, and wherein the identification information uniquely identifies the alarm associated with the first device.

21. The method of Claim 1, wherein the augmented alarm is in a plurality of augmented alarms received at the network operations center, and further comprising:

creating a view comprising a subset of the plurality of augmented alarms received at the network operations center by filtering the plurality of augmented alarms using a set of criteria.

22. A computer-readable medium carrying one or more sequences of instructions for communicating an alarm in a computer network, wherein execution of the one or more sequences of instructions by one or more processors causes the one or more processors to perform the steps of:

detecting an event associated with a device or any component thereof on the computer network, wherein the device is associated with a particular site in a plurality of sites;

in response to detecting the event, propagating an alarm to an alarm identification component;

at the alarm identification component, augmenting the alarm with identification information to result in creating an augmented alarm; and

transmitting the augmented alarm to a network operations center for the computer network, wherein the network operations center processes alarms for each site in the plurality of sites.

23. The computer-readable medium of Claim 22, wherein the identification information identifies the particular site in the plurality of sites in which the alarm originated.

24. The computer-readable medium of Claim 22, wherein the identification information uniquely identifies the device on the computer network.

25. The computer-readable medium of Claim 22, wherein the identification information comprises an address for the device on the computer network.

26. The computer-readable medium of Claim 22, wherein the identification information comprises geographical information associated with the particular site in which the alarm originated.

27. The computer-readable medium of Claim 22, wherein the identification information comprises network information associated with the particular site in which the alarm originated.

28. The computer-readable medium of Claim 22, wherein the alarm identification component is hosted by one or more edge routers associated with the particular site.

29. The computer-readable medium of Claim 22, wherein each site in the plurality of sites is a local area network, and wherein the alarm identification component is a router that communicates with one or more edge routers, wherein each of the one or more edge routers is associated with a different site in the plurality of sites.

30. The computer-readable medium of Claim 22, wherein the alarm identification component is in the device that detected the event.

31. The computer-readable medium of Claim 22, wherein the step of augmenting the alarm with identification information comprises:
conveying the identification information in a VarBind portion of a SNMP message associated with the alarm.

32. The computer-readable medium of Claim 22, wherein the step of detecting the event comprises:
detecting a condition using a SNMP agent that is in the device.

33. The computer-readable medium of Claim 22, wherein the step of propagating the alarm is performed by transmission of a SNMP message, a Syslog event, or a CNS bus event.

34. The computer-readable medium of Claim 22, wherein execution of the one or more sequences of instructions on each computer-readable medium by the one or more processors causes the one or more processors to further perform the step of:
in response to detecting the event associated with the device, generating the alarm at one member selected from the group consisting of: a switch, a router, an IP

phone, a call manager component, a voice mail component, and an event monitoring component.

35. The computer-readable medium of Claim 22, wherein execution of the one or more sequences of instructions on each computer-readable medium by the one or more processors causes the one or more processors to further perform the step of:

creating the identification information based on an address of the device on the computer network.

36. The computer-readable medium of Claim 22, wherein execution of the one or more sequences of instructions on each computer-readable medium by the one or more processors causes the one or more processors to further perform the step of:

creating the identification information based on an address of an edge router associated with the particular site.

37. The computer-readable medium of Claim 22, wherein execution of the one or more sequences of instructions on each computer-readable medium by the one or more processors causes the one or more processors to further perform the step of:

creating the identification information based on a table that maps device addresses to identification information.

38. The computer-readable medium of Claim 22, wherein execution of the one or more sequences of instructions on each computer-readable medium by the one or more processors causes the one or more processors to further perform the steps of:

performing a first determination of whether the identification information may be created based on a table that maps device addresses to identification information;

if the first determination is negative, then performing a second determination of whether the identification information may be created based on an address of an edge router associated with the particular site; and

if the second determination is negative, then creating the identification information using a set of default identification information associated with the alarm identification component.

39. The computer-readable medium of Claim 22, wherein the alarm identification component augments the same identification information for each device in the particular site.

40. The computer-readable medium of Claim 22, wherein one or more of the plurality of sites uses network address translation.

41. The computer-readable medium of Claim 22, wherein the device is a first device, wherein the first device and a second device on the computer network both use network address translations, wherein the second device is associated with a different site in a plurality of sites than the first device, wherein the first device and the second device are associated with the same IP address, and wherein the identification information uniquely identifies the alarm associated with the first device.

42. The computer-readable medium of Claim 22, wherein the augmented alarm is in a plurality of augmented alarms received at the network operations center, and wherein execution of the one or more sequences of instructions on each computer-readable medium by the one or more processors causes the one or more processors to further perform the step of:

creating a view comprising a subset of the plurality of augmented alarms received at the network operations center by filtering the plurality of augmented alarms using a set of criteria.

43. A system for communicating an alarm in a computer network, comprising:

means for detecting an event associated with a device or any component thereof on the computer network, wherein the device is associated with a particular site in a plurality of sites;

means for propagating an alarm to an alarm identification means in response to detecting the event;

means for augmenting the alarm with identification information to result in creating an augmented alarm; and

means for transmitting the augmented alarm to a network operations center for the computer network, wherein the network operations center processes alarms for each site in the plurality of sites.

44. The system of Claim 43, wherein the identification information identifies the particular site in the plurality of sites in which the alarm originated.

45. The system of Claim 43, wherein the identification information uniquely identifies the device on the computer network.

46. The system of Claim 43, wherein the identification information comprises an address for the device on the computer network.

47. The system of Claim 43, wherein the identification information comprises geographical information associated with the particular site in which the alarm originated.

48. The system of Claim 43, wherein the identification information comprises network information associated with the particular site in which the alarm originated.

49. The system of Claim 43, wherein the means for augmenting the alarm is hosted by one or more edge routers associated with the particular site.

50. The system of Claim 43, wherein each site in the plurality of sites is a local area network, and wherein the means for augmenting the alarm is a router that communicates with one or more edge routers, wherein each of the one or more edge routers is associated with a different site in the plurality of sites.

51. The system of Claim 43, wherein the means for augmenting the alarm is in the device that detected the event.

52. The system of Claim 43, wherein the means for augmenting the alarm with identification information comprises:

means for conveying the identification information in a VarBind portion of a SNMP message associated with the alarm.

53. The system of Claim 43, wherein the means for detecting the event comprises:

means for detecting a condition using a SNMP agent that is in the device.

54. The system of Claim 43, wherein the means for propagating the alarm is performed by a means for transmitting a SNMP message, a Syslog event, or a CNS bus event.

55. The system of Claim 43, further comprising:

means for generating the alarm, in response to detecting the event associated with the device, at one member selected from the group consisting of: a switch, a router, an IP phone, a call manager component, a voice mail component, and an event monitoring component .

56. The system of Claim 43, further comprising:

means for creating the identification information based on an address of the device on the computer network.

57. The system of Claim 43, further comprising:

means for creating the identification information based on an address of an edge router associated with the particular site.

58. The system of Claim 43, further comprising:

means for creating the identification information based on a table that maps device addresses to identification information.

59. The system of Claim 43, further comprising:

means for performing a first determination of whether the identification information may be created based on a table that maps device addresses to identification information;

means for performing a second determination of whether the identification information may be created based on an address of an edge router associated with the particular site if the first determination is negative; and

means for creating the identification information using a set of default identification information associated with the alarm identification component if the second determination is negative.

60. The system of Claim 43, wherein the means for augmenting the alarm augments the same identification information for each device in the particular site.

61. The system of Claim 43, wherein one or more of the plurality of sites uses network address translation.

62. The system of Claim 43, wherein the device is a first device, wherein the first device and a second device on the computer network both use network address translations, wherein the second device is associated with a different site in a plurality of sites than the first device, wherein the first device and the second device are associated with the same IP address, and wherein the identification information uniquely identifies the alarm associated with the first device.

63. The system of Claim 43, wherein the augmented alarm is in a plurality of augmented alarms received at the network operations center, and further comprising:

means for creating a view comprising a subset of the plurality of augmented alarms received at the network operations center by filtering the plurality of augmented alarms using a set of criteria.

64. A system for communicating an alarm in a computer network, comprising:

one or more processors; and

one or more computer-readable mediums that each carry one or more sequences of instructions for communicating an alarm in a computer network, wherein

execution of the one or more sequences of instructions on each computer-readable medium by the one or more processors causes the one or more processors to perform the steps of:

detecting an event associated with a device or any component thereof on the computer network, wherein the device is associated with a particular site in a plurality of sites;

in response to detecting the event, propagating an alarm to an alarm identification component;

at the alarm identification component, augmenting the alarm with identification information to result in creating an augmented alarm; and

transmitting the augmented alarm to a network operations center for the computer network, wherein the network operations center processes alarms for each site in the plurality of sites.

65. The system of Claim 64, wherein the identification information identifies the particular site in the plurality of sites in which the alarm originated.

66. The system of Claim 64, wherein the identification information uniquely identifies the device on the computer network.

67. The system of Claim 64, wherein the identification information comprises an address for the device on the computer network.

68. The system of Claim 64, wherein the identification information comprises geographical information associated with the particular site in which the alarm originated.

69. The system of Claim 64, wherein the identification information comprises network information associated with the particular site in which the alarm originated.

70. The system of Claim 64, wherein the alarm identification component is hosted by one or more edge routers associated with the particular site.

71. The system of Claim 64, wherein each site in the plurality of sites is a local area network, and wherein the alarm identification component is a router that communicates with one or more edge routers, wherein each of the one or more edge routers is associated with a different site in the plurality of sites.

72. The system of Claim 64, wherein the alarm identification component is in the device that detected the event.

73. The system of Claim 64, wherein the step of augmenting the alarm with identification information comprises:

conveying the identification information in a VarBind portion of a SNMP message associated with the alarm.

74. The system of Claim 64, wherein the step of detecting the event comprises:

detecting a condition using a SNMP agent that is in the device.

75. The system of Claim 64, wherein the step of propagating the alarm is performed by transmission of a SNMP message, a Syslog event, or a CNS bus event.

76. The system of Claim 64, wherein execution of the one or more sequences of instructions on each computer-readable medium by the one or more processors causes the one or more processors to further perform the step of:

in response to detecting the event associated with the device, generating the alarm at one member selected from the group consisting of: a switch, a router, an IP phone, a call manager component, a voice mail component, and an event monitoring component.

77. The system of Claim 64, wherein execution of the one or more sequences of instructions on each computer-readable medium by the one or more processors causes the one or more processors to further perform the step of:
creating the identification information based on an address of the device on the computer network.

78. The system of Claim 64, wherein execution of the one or more sequences of instructions on each computer-readable medium by the one or more processors causes the one or more processors to further perform the step of:
creating the identification information based on an address of an edge router associated with the particular site.

79. The system of Claim 64, wherein execution of the one or more sequences of instructions on each computer-readable medium by the one or more processors causes the one or more processors to further perform the step of:
creating the identification information based on a table that maps device addresses to identification information.

80. The system of Claim 64, wherein execution of the one or more sequences of instructions on each computer-readable medium by the one or more processors causes the one or more processors to further perform the steps of:

performing a first determination of whether the identification information may be created based on a table that maps device addresses to identification information;

if the first determination is negative, then performing a second determination of whether the identification information may be created based on an address of an edge router associated with the particular site; and

if the second determination is negative, then creating the identification information using a set of default identification information associated with the alarm identification component.

81. The system of Claim 64, wherein the alarm identification component augments the same identification information for each device in the particular site.

82. The system of Claim 64, wherein one or more of the plurality of sites uses network address translation.

83. The system of Claim 64, wherein the device is a first device, wherein the first device and a second device on the computer network both use network address translations, wherein the second device is associated with a different site in a plurality of sites than the first device, wherein the first device and the second device are associated with the same IP address, and wherein the identification information uniquely identifies the alarm associated with the first device.

84. The system of Claim 64, wherein the augmented alarm is in a plurality of augmented alarms received at the network operations center, and wherein execution of the one or more sequences of instructions on each computer-readable medium by the one or more processors causes the one or more processors to further perform the step of:

creating a view comprising a subset of the plurality of augmented alarms received at the network operations center by filtering the plurality of augmented alarms using a set of criteria.